



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/469,497	12/22/1999	YUICHI KUNORI	49657-5	5036

20277 7590 12/24/2003
MCDERMOTT WILL & EMERY
600 13TH STREET, N.W.
WASHINGTON, DC 20005-3096

EXAMINER

SONG, JASMINE

ART UNIT	PAPER NUMBER
----------	--------------

2188

DATE MAILED: 12/24/2003

18

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/469,497

Applicant(s)

KUNORI, YUICHI

Examiner

Jasmine Song

Art Unit

2188

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 October 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 and 15-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-13, 15 and 18-21 is/are allowed.
- 6) ☒ Claim(s) 16, 17, 22 and 23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Art Unit: 2188

Detailed Action

1. This Office Action is in responses to the amendment D filed on filed on 10/03/2003, claims 1-23 are pending in the application, claims 1-13,15,18-21 have been allowed, claim 14 has been cancelled, and claims 16-17 and 22-23 are represented for examination.

Specification

2. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 16-17, 22-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuwano et al., U.S. Patent 6,571,311 B2 in view of Wong., US patent 6,160,739.

Regarding claims 16, Kuwano teaches that a method for writing data to a non-volatile semiconductor memory device (it is taught as writing data to the EEPROM as

shown in the Fig.2B and 2C and Fig.3), said non-volatile semiconductor memory device including a memory cell storing first and second data (it is taught as data signal RD[x], where "x" is either 0,1,2 or 3) and first and second registers (it is taught as EEPROM data register block 303 which have plurality registers), said method comprising the step of:

storing (Fig.2B or 2C or Fig.3) in said first register (one of the register such as the flip-flop circuit 701 in the Fig.6 and Fig.7, col.10, lines 48-52 and col.11, lines 11- 18, such as 701-1) said first data (the data signal RD[x], where "x" is either 0,1,2 or 3, such as RD[0]) input from the outside of said non-volatile semiconductor memory device (it is shown in the Fig. 2B or 2C or Fig.3);

writing said first data stored in said first register to said EEPROM (it is shown in the Fig. 2B or 2C or Fig.3, it is taught as writing the first data RD[0] stored in the first register 701-1 to the EEPROM);

storing (Fig.2B or 2C or Fig.3) in said second register (one of the register such as the flip-flop circuit 701 in the Fig.6 and Fig.7, col.10, lines 48-52 and col.11, lines 11- 18, such as 701-2) said second data (the data signal RD[x], where "x" is either 0,1,2 or 3, such as RD[1]) input from the outside of said non-volatile semiconductor memory device (it is shown in the Fig. 2B or 2C or Fig.3); and

writing said second data stored in said second register to said EEPROM (it is shown in the Fig. 2B or 2C or Fig.3, it is taught as writing the second data RD[1] stored in the second register 701-2 to the EEPROM).

Kuwano does not teach that writing the second data to the memory cell to which said first data has been already written. Kuwano only teaches that writing the first data stored in the first register and the second data stored in the second register to the EEPROM in parallel. However, Wong teaches that writing the second data (the data value "0") to the memory cell (the same memory cell to the first data value "1" stored in) to which said first data (the data value "1") has been already written (col.10, lines 64 to col.11, lines 5).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the teachings of Wong in the memory system of Kuwano and writing the second data to the memory cell to which said first data has been already written for the advantage of reducing the frequency of erase operations and to increase the endurance of non-volatile memories in order to prevent performance degradation and extend the usable lifetime of the memory (col.3, lines 57-60 and col.5, lines 3-4).

According, one of ordinary skill in the art would have recognized this and concluded that they are from the same field of endeavor. This would have motivated one of ordinary skill in the art to implement the above combination for the advantage set forth above.

Regarding claim 17, Wong teaches that wherein said step of writing said first data overlaps with said step of storing said second data (col.10, lines 17-43).

Regarding claim 22, Wong teaches that wherein said step of storing said second data is performed after said step of storing said first data (col.9, lines 51-53).

Regarding claim 23, Wong teaches that wherein said step of writing said second data is performed after said step of writing said first data (col.9, lines 65-66).

Allowable Subject Matter

5. Claims 1-13,15,18-21 are allowed.

Response to Arguments

6. Applicant's arguments with respect to claims 16-17 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. When responding to the office action, Applicant is advised to clearly point out the patentable novelty which he or she thinks the claims present in view of the state of the art disclosed by the references cited or the objections made. He or she must also show how the amendments avoid such references or objections. See 37 C.F.R. 1.111 (c).

9. When responding to the office action, Applicants are advised to provide the examiner with the line numbers and page numbers in the application and/or references cited to assist examiner to locate the appropriate paragraphs.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jasmine Song whose telephone number is 703-305-7701. The examiner can normally be reached on 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mano Padmanabhan can be reached on 703-306-2903. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9306.

Art Unit: 2188

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

Jasmine Song



Patent Examiner

December 22, 2003



Mano Padmanabhan



Supervisory Patent Examiner

Technology Center 2100